

Mark Schulist

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INTERESTS

- Mathematics/Computing: Bayesian statistics, Markov chain Monte Carlo, approximate nearest neighbor search, simulations
- Machine Learning: Image classification, transformers, dimensionality reduction, transfer learning
- Software Development: Frontend (React/NextJS), backend (FastAPI, Go), databases (Postgres, Supabase)
- Non-academic: tennis, birding, photography, rock climbing

EDUCATION

Washington University in St. Louis

St. Louis, MO

BS in Computer Science, Minor in Physics

Aug 2023 - May 2027

- Cumulative GPA: 3.94/4.00

EXPERIENCE

Data Science Intern

May 2024 - Aug 2024

SeerAI

- Leveraged the Geodesic spatiotemporal platform via Python API and ArcGIS Online
- Wrote band arithmetic and inverse distance weighting middlewares in Go, utilizing expression parsing and K-D trees respectively

Research Assistant

Aug 2021 - Present

California Academy of Sciences

San Francisco, CA

- Developed a data pipeline to train a custom bird vocalization classifier using the [Google Perch](#) library
- Significantly improved the precision and recall of the classifier by fine-tuning the model on our own data
- Created simulations to test a Bayesian hierarchical occupancy model in R/JAGS
- Conducted avian point counts in Eldorado National Forest for the past three summers

Web Developer

Jun 2023 - Aug 2023

California Academy of Sciences

San Francisco, CA

- Created a website to teach researchers about food webs for a wildlife metrics project

PROJECTS

Perch Agile Modeling | ([GitHub Repo](#)) | NextJS, FastAPI, SQLite, Iceberg, Python, Google Cloud

May 2024 - Present

- Developed a cloud-native platform to enable bioacoustics researchers to quickly train a custom classifier using transfer learning and the [Google Perch](#) library
- Utilized SQLite and approximate nearest neighbor algorithms to efficiently search audio feature embeddings
- Used Iceberg to store billions of rows of classifier outputs

Winner of the Master Category at Hack WashU 2024 | ([GitHub Repo](#)) | NextJS, Supabase, DeckGL

Oct 2024

- Developed a website to provide a visual representation of WashU buildings, courses, and their relevant information, available at (washucampusview.com)
- Utilized DeckGL to create a 3D map of the buildings and integrated Supabase to store the building data

Winner of Hack Case Western Reserve University 2024 | ([GitHub Repo](#)) | NextJS, MongoDB

Feb 2024

- Developed a website to aggregate all of the events at Case Western that serve free food
- Fine-tuned a GPT-3.5 model to correctly identify and rate events that serve food

Google Student Developer Club at Washington University | NextJS, MongoDB

Jan 2024 - Present

- Developed a scheduling website for the Down Syndrome Association of Greater St. Louis
- Currently Project Management Lead overseeing 5 projects designed to help the St. Louis community

TECHNICAL SKILLS

Languages: Java, Go, Python, JavaScript/TypeScript, HTML/CSS, R

Other Software/Tools: Git, Docker, Google Firebase, MongoDB, Supabase, SQLite, FastAPI, Linux, \LaTeX , Typst

Data Analysis/ML: Bayesian hierarchical modeling, JAGS, scikit-learn, Tensorflow, Pytorch, Transformers